

REMARKS

This responds to the Office Action mailed on August 23, 2006.

No claims are amended, canceled or added; as a result, claims 1-5, 7 and 20-40 remain pending in this application.

§103 Rejection of the Claims

Claims 1-3 and 5-7 and 20-31 were rejected under 35 U.S.C. § 103(a) as being unpatentable over McGrath (U.S. 6,259,795 B1) in view of Chen (U.S. 6,990,205 B1).

Claim 4 and 34-36 were rejected under 35 U.S.C. § 103(a) as being unpatentable over McGrath (U.S. 6,259,795 B1) in view of Chen (U.S. 6,990,205 B1) and in further view of McGrath et al. (U.S. 6,628,787 B1).

Claim 32 was rejected under 35 U.S.C. § 103(a) as being unpatentable over McGrath (U.S. 6,259,795 B1) in view of Chen (U.S. 6,990,205 B1) in view of Gerzon (U.S. 4,086,433).

Claims 33 and 37 were rejected under 35 U.S.C. § 103(a) as being unpatentable over McGrath (U.S. 6,259,795 B1) in view of Chen (U.S. 6,990,205 B1), in view of Gerzon (U.S. 4,086,433) as applied to claim 32 above, and further in view of Clemow (U.S. 6,577,736 B1).

Claims 38, 39 and 40 were rejected under 35 U.S.C. § 103(a) as being unpatentable over McGrath (U.S. 6,259,795 B1) in view of McGrath et al. (U.S. 6,628,787 B1) and in view of Chen (U.S. 6,990,205 B1), as applied to claim 34 above, and further in view of Clemow.

Examiner Interview

The Examiner is thanked for the opportunity to discuss this application during the telephonic interview on November 7, 2006.

During the interview inventor Jean-Marc Jot discussed the differences between the invention as claimed in the present application and the technology described in McGrath (U.S. 6,259,795 B1) and Chen (U.S. 6,990,205 B1). The Examiner indicated that all the limitations of the independent claims were not present in McGrath and Chen, whether taken singularly or in combination. Agreement was reached that the claims, as previously presented, are allowable and that the rejection will be withdrawn.

A summary of the interview is set out below.

The first limitation in claim 1 provides “selecting a set of spatial functions, each having an associated scaling factor” and the last limitation provides “decoding the encoded signals using filters that are defined based on the spatial functions.” These limitations are not present in McGrath or Chen.

Chen does not initially select a set of spatial functions. Specifically, in Chen a set of spatial functions and a corresponding set of filters are derived simultaneously via Eigen analysis based on a HRTF data.

As conceded in the Office Action, McGrath does not separate the first and second encoded signals and the limitation of “the left-channel audio output excluding the second encoded signal and the right-channel audio output excluding the first encoded signal” is not present in McGrath.

As mentioned, neither Chen nor McGrath teach or even suggest “decoding the encoded signals using filters that are defined based on the spatial functions.” This limitation cannot present in Chen because in Chen the filters and the spatial functions are derived simultaneously. In McGrath these filters are in the decoder and they are filters that are rendering specific directions. McGrath’s decoder encodes a mix of all the sources in a B-format, and this B-format is known to a person of skill in the art not to differentiate between a left and a right ear. The way that McGrath ultimately gets a signal that is appropriate for playing over headphones, and thus providing left and right ear separation, is to first take the B-format encoded signal and decode it for a multi-channel speaker layout. Prior to this point, there is no separation between left and right ear. Thus, in McGrath, a further step is then required to convert the multi-channel speaker signal into a headphone signal. It is at that step that McGrath separates the left and right ear. This is in stark contrast to the invention as claimed in claim 1 where, for example, the left-channel audio output and the right-channel audio output are separated prior to decoding.

It should also be noted that, in McGrath the filters are not based on spectral functions because they depend totally on what intermediate speaker format he has chosen. Accordingly, the limitation of “decoding the encoded signals using filters that are defined based on the spatial functions” is not described or even suggested in McGrath. This limitation is also not described in Chen. It is submitted that this is also reason why McGrath and Chen (that uses Eigen analysis of HRTF data) are not combinable.

In view of the discussion above the Examiner agreed to withdraw the rejection of claim 1 and it was agreed that similar arguments apply to claim 20. Accordingly, it was agreed that independent claims 1 and 20 are allowable and the Examiner indicated that he would withdraw the rejection of the claims. As claims 2-5, and 7 are dependent upon claim 1 they are also allowable. Likewise, as claims 21-40 are dependent upon claim 20 they are also allowable.

CONCLUSION

Applicants respectfully submit that the claims are in condition for allowance and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicants' attorney 408-278-4041 to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

Respectfully submitted,

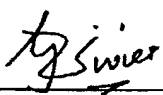
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